

## **Searching for a Christian Response to Biotechnology**

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**By Margaret Macpherson**

Many people will admit they don't have all the answers but it's few who will freely admit they don't even know all the questions. Yet this was the unabashed position of participants in last week's Edmonton conference on the Christian response to biotechnology and, more particularly, to the pressing issues of genetically modified foods.

The Christian community took this opportunity to formulate moral and ethical questions arising from the rapidly advancing biotechnical sciences. These questions need to be put to the scientific community and answered in broad public dialogues to give ethical concerns a chance to catch up with scientific discovery. As one educator put it, "The task of finding information comes more quickly than the task of reflection on that information."

Does scientifically modifying the genetic make-up of individual plants equate to humans playing God? Or is it simply using our God-given creative powers to manipulate, and hopefully better, the riches given to us by the Creator? These and other questions were hotly debated on January 19, the last day of a three-day food conference at King's University College in Edmonton.

The open forum, sponsored in part by the Canadian Council of Churches, represented both proponents and critics of the science of genetic engineering and challenged Christians from all denominations to consider the moral, ethical and spiritual ramifications of the new technologies.

The day-long conference opened with a panel discussion addressing the ethics of biotechnology. Brewster Kneen, author of *Farmageddon: The Culture of Biotechnology and From Land to Mouth*, claimed that two-thirds of Canada's canola crop, now grown from genetically engineered seeds produced and patented by one of four private companies, is severely limiting farmer's choices as to what they can grow on their own land.

Government is supporting and promoting genetic engineering, said Kneen, and it becomes impossible to segregate products such as soy, corn and conventionally grown canola from the "inherently violent" system of cross-pollination with the "argotoxins" in genetically altered seed. Kneen said that by promoting genetic engineering, big business and government are sacrificing diversity and safety for the short term gains of convenience and increased crop yield, an affront to the balance in nature.

Pierre Bilodeau, a research scientist from the Alberta Research Council, argued that biotechniques are simply tools used to make plants better and experimenting with genetic transference in a lab setting provided more predictability and more precision than there would

be in conventional plant breeding techniques. He presented biotechnology generally, and transgenetics specifically, as regulators; the scientific community, with all its checks and balances, can use its knowledge to improve traditional methods of agriculture and thus feed more of the world's hungry. Bilodeau believes that there is a lot of misinformation and concern about biotechnology in the public sector and that it is up to the scientific community to "get out of the lab and address these issues and concerns."

King's College Associate Professor of Biology, Hank Bestman, took the middle ground in the ethical and biotechnical debate. He said that while there were certain safety concerns with genetic engineering, science has both the ability and the mandate to work within nature. Bestman's greatest concerns were with control and ownership of genetically modified materials. If multinationals, driven by profits, are controlling the research, he said, who will assess the moral and ethical implications of their choices?

James Visser, a seed potato farmer and the founder of Topsoil, moderated the second half of the conference, which examined the Christian perspective on biotechnology. He prefaced his remarks by explaining that he has decided not to accept a contract to grow genetically modified potatoes because he felt the direction and control of the contract was out of his hands. "Power could lead to powerlessness," he added.

Dr. Eric Kilbreath, a theologian and specialist in medical ethics from Saint Joseph's College in Edmonton, said that the genetic/biotechnical age promises a new revolution, just as its modern predecessors, the atomic age and the computer age. Referring to the Book of Ecclesiastes, he reminded the audience that there is nothing new under the sun. Christians, Kilbreath said, must consider whether altering genes is about utilizing the creative powers given by God or is succumbing to pride and the notion that humans can do things better than God. "We fool ourselves if we think we have reached a God-like knowledge," he cautioned. He asked the Christian community to contemplate this: just because we can manipulate the genetic code of plants, does that mean we should?

In his presentation, Kilbreath was careful to address both sides of the biotechnical argument saying the applications of the new science has the potential to be both very good and very bad. He cited both scripture (Leviticus 19:19) and a strong moral code that guards against mixed species and labels them a "destructive force" in the world. Allogamy, or cross-fertilization between species, has long been considered threatening to humans, said Kilbreath. However, because human beings are endowed with reason we can see benefits to genetically modified food. Christians must ask themselves if genetically modified food is good science or if it is harmful? He reminded the audience that humans have selectively bred plants and animals conventionally for thousands of years and that over time nature practices its own biotechnology.

Ultimately Kilbreath's presentation came down to an examination of motives. He said the Christian community must question whether the motivation of genetic modification is to produce more and better food or to increase financial gain? The method that ethicists use to

define spiritual motivations of all medical and biotechnical situations is by asking a threefold question: Is it (the process or procedure) intrinsically evil? Is it life affirming? Is it traditional?

Kilbreath concluded his presentation by saying the biotechnical age is upon us; the debate as to its appropriateness is “extremely vitriolic” and Christians need to take time to consider what exactly is at stake. Christians need to proceed slowly and take time to formulate a response to the rapidly advance of today’s technologies.

The final formal speaker at the conference was biological scientist Dr. David Cass from the University of Alberta. He is a biotechnician studying the effects of adding genetic material to the embryo sac of maize in order to develop corn that has more nutrients, is disease resistant, can grow in saltier soil and withstand colder climates. He said isolating and adding new genetic material to a plant embryo sac means earlier laboratory detection of what the benefits may be. “I’m extremely comfortable with biotechnical material,” he said, adding that the goal of a scientist like himself is to understand plant growth and development and to use genetics to improve crops. Cass said that important steps have been made in conventional plant breeding. Opaque 2, an enzyme that eliminates vitamin deficiencies in human populations arose through conventional plant breeding methods. Genetic manipulation simply speeds up that process.

Following small group sessions, the delegates reconvened with recommendations which included a desire for solidarity among Christians in giving voice to the moral implications of biotechnology in both the public and corporate sectors, and a church-adopted mandate to demand accountability from both the corporate and scientific communities. Mutually held views on creation, stewardship and sanctify of life should underlie the Christian perspective. The Christian community needs to further explore the market forces which control the use of biotechnology.

University of Alberta chemist Margaret Ann Armour summed up the session by saying that, despite its obvious complexity, biotechnology has both risks and benefits. Christians in a faith community must constantly and persistently demand explanations of the decision-makers to ensure that precautionary guidelines are established in this field. The voice of the churches must not be marginalized on issues involved with health, safety and the quality and sanctity of life. Networks must be built between scientists and religious organizations and the churches need access to information and disseminate it to the public.